

PDC Energy, Inc.
Fourth Quarter 2021 Groundwater Monitoring Summary

November 29, 2021

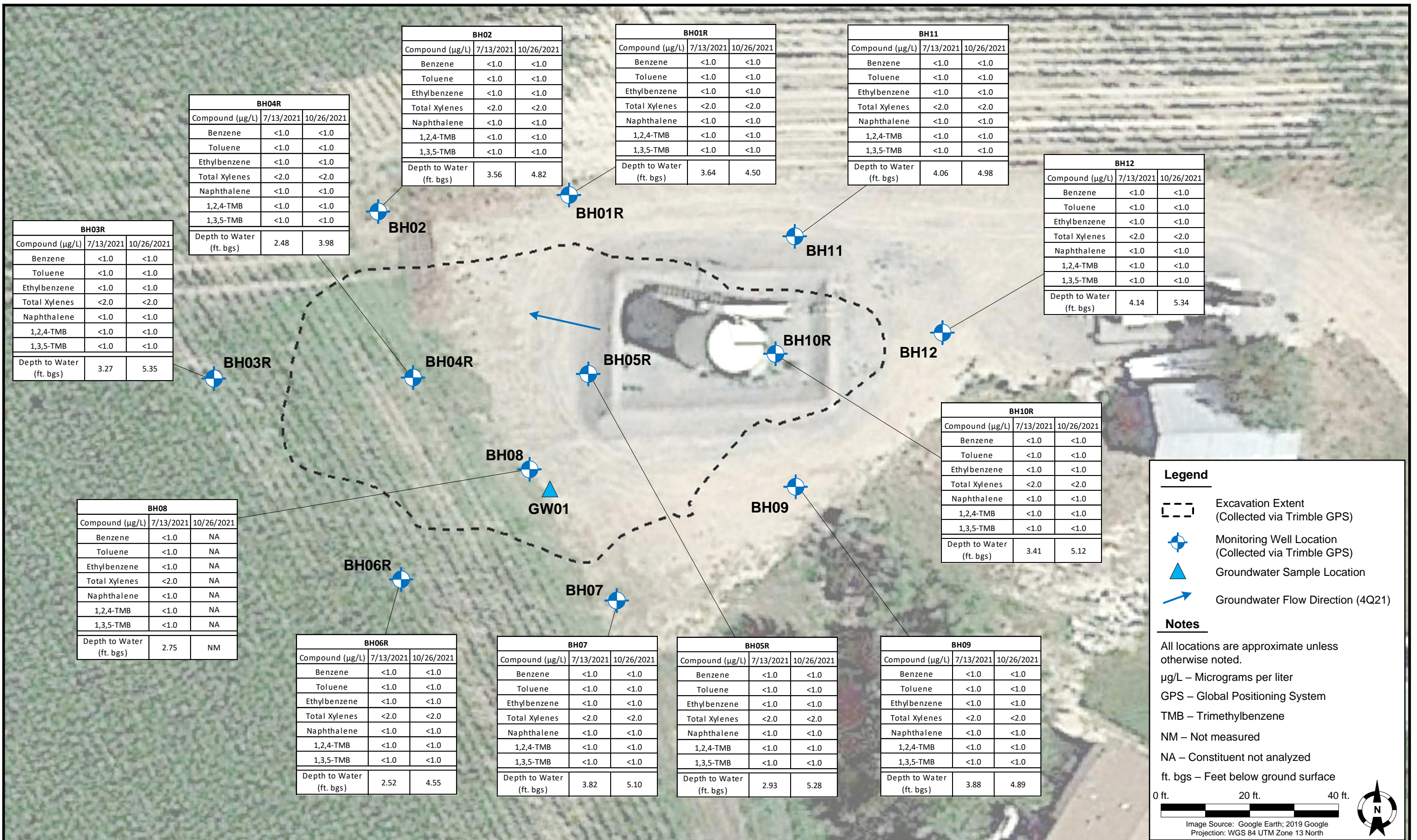
Former Owl Creek 7, 7-5 Tank Battery
NESE Section 5 T6N R64W
Remediation # 16159

This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Owl Creek 7, 7-5 Tank Battery. On October 26, 2021, groundwater monitoring was conducted at 12 monitoring wells (BH01R, BH02, BH03R—BH06R, BH07—BH09, BH10R, BH11, and BH12). Temporary monitoring wells BH01R, BH02, BH03R—BH06R, BH07—BH08, BH10R, and BH11) were installed using a hand auger in cultivated land. The wells were purged, sampled, and subsequently abandoned. A GPS point was collected from all temporary monitoring well locations to ensure the groundwater sample locations remains consistent between quarters. Due to dry conditions on site, a sample was unable to be collected from temporary monitoring well BH08. Eleven groundwater samples were submitted for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B, total dissolved solids (TDS) by Method SM 2540C, and chloride and sulfate anions by EPA Method 300.0.

Fourth quarter 2021 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 groundwater standards in all eleven sampled locations. TDS and sulfate anion levels were in exceedance of the applicable COGCC Table 915-1 groundwater standards and above 1.25x the background concentrations collected from the up-gradient monitoring wells (BH09 and BH12) in monitoring wells BH03R – BH05R and BH10R. Chloride anion concentrations were below the applicable regulatory standards in all sampled locations. Sample locations and corresponding organic analytical results are illustrated on Figures 1 and 2. Groundwater elevation data is illustrated on Figure 3. Groundwater analytical results are summarized in Tables 1 and 2. The laboratory analytical report is

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the second quarter 2021 and will remain the selected remediation strategy through the first quarter 2022.

First quarter 2022 groundwater sampling will be conducted in January 2022.



DATE:	November 29, 2021
DESIGNED BY:	B. Nelson
DRAWN BY:	J. Marcus



TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6855 W. 119th Ave.
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Owl Creek 7, 7-5 Tank Battery
 NESE, Section 5 Township 6 North, Range 64 West
 Weld County, Colorado

GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE
1



DATE: November 19, 2021

DESIGNED BY: B. Nelson

DRAWN BY: A. Dahl



TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6855 West 119th Avenue
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Owl Creek 7, 7-5 Tank Battery
NESE, Section 5 Township 6 North, Range 64 West
Weld County, Colorado

**GROUNDWATER
ELEVATION CONTOUR
MAP (10/26/2021)**

**FIGURE
3**

TABLE 1
FORMER OWL CREEK 7, 7-5 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
GW01	2/22/2021	<1.0	<1.0	2.9	5.9	2.8	12	1.8	~6	-
BH01R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.92	4824.87
BH01R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.64	4825.40
BH01R	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.50	4822.80
BH02	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NM	NM
BH02	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.56	4824.45
BH02	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.82	4821.39
BH03R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.81	4822.99
BH03R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.27	4823.80
BH03R	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.35	4820.16
BH04R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.33	4824.69
BH04R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.48	4825.74
BH04R	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.98	4822.51
BH05R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.81	4825.06
BH05R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.93	4826.23
BH05R	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.28	4822.06
BH06R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.83	4824.25
BH06R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.52	4825.89
BH06R	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.55	4821.90
BH07	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.90	4825.78
BH07	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.82	4826.53
BH07	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.10	4823.59
BH08	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NM	NM
BH08	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.75	4826.03
BH08	10/26/2021	Not Sampled - Dry							NM	NM
BH09	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.64	4826.77
BH09	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.88	4826.53
BH09	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.89	4824.93
BH10R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.44	4825.70
BH10R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.41	4827.03
BH10R	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.12	4823.50
BH11	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.16	4826.40
BH11	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.06	4826.94
BH11	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.98	4824.00
BH12	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.68	4827.31
BH12	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.14	4826.85
BH12	10/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.34	4825.65

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.

2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

TMB = Trimethylbenzene

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

(<) = Analytical result is less than the indicated laboratory reporting limit.

ft. = Feet

AMSL = Above Mean Sea Level

NM = Not Measured

TABLE 2
FORMER OWL CREEK 7, 7-5 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)	Depth to Water (²) (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG	-	-
BH01R	4/26/2021	1,140	157	254	2.92	4824.87
BH01R	7/13/2021	572	16.2	263	3.64	4825.40
BH01R	10/26/2021	550	11.6	241	4.50	4822.80
BH02	4/6/2021	596	4.30	132	NM	NM
BH02	7/13/2021	530	14.4	474	3.56	4824.45
BH02	10/26/2021	590	12.2	270	4.82	4821.39
BH03R	4/26/2021	1,550	205	237	2.81	4822.99
BH03R	7/13/2021	1,860	292	1,500	3.27	4823.80
BH03R	10/26/2021	1,740	216	1,410	5.35	4820.16
BH04R	4/26/2021	4,590	740	2,530	2.33	4824.69
BH04R	7/13/2021	2,850	343	2,420	2.48	4825.74
BH04R	10/26/2021	3,690	130	3,420	3.98	4822.51
BH05R	4/26/2021	4,290	561	2,610	2.81	4825.06
BH05R	7/13/2021	1,390	85.4	1,280	2.93	4826.23
BH05R	10/26/2021	899	32.8	383	5.28	4822.06
BH06R	4/26/2021	1,270	172	303	2.83	4824.25
BH06R	7/13/2021	653	19.8	342	2.52	4825.89
BH06R	10/26/2021	616	15.8	266	4.55	4821.90
BH07	4/6/2021	561	3.34	125	2.90	4825.78
BH07	7/13/2021	640	21.2	431	3.82	4826.53
BH07	10/26/2021	582	13.0	252	5.10	4823.59
BH08	4/6/2021	686	6.88	227	NM	NM
BH08	7/13/2021	1,340	47.2	1,100	2.75	4826.03
BH08	10/26/2021	Not Sampled - Dry			NM	NM
BH09	4/6/2021	647	6.06	176	3.64	4826.77
BH09	7/13/2021	633	23.8	495	3.88	4826.53
BH09	10/26/2021	577	8.20	274	4.89	4824.93
BH10R	4/26/2021	1,540	189	410	3.44	4825.70
BH10R	7/13/2021	578	8.60	376	3.41	4827.03
BH10R	10/26/2021	721	11.8	401	5.12	4823.50
BH11	4/6/2021	624	9.80	235	3.16	4826.40

TABLE 2
FORMER OWL CREEK 7, 7-5 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)	Depth to Water (²) (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG	-	-
BH11	7/13/2021	505	10.0	266	4.06	4826.94
BH11	10/26/2021	512	13.2	198	4.98	4824.00
BH12	4/6/2021	504	6.74	129	3.68	4827.31
BH12	7/13/2021	528	24.8	439	4.14	4826.85
BH12	10/26/2021	489	7.80	204	5.34	4825.65

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

(<) = Analytical result is less than the indicated laboratory reporting limit.

NM = Not measured

BOLD = Analytical result is in exceedance of applicable standard but within 1.25x background concentration.

BOLD = Analytical result is in exceedance of applicable standard and above 1.25x background concentration.

Up-gradient well used for background concentration.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 04, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Owl Creek 7,7-5

Work Order #2110459

Enclosed are the results of analyses for samples received by Summit Scientific on 10/26/21 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01R	2110459-01	Water	10/26/21 11:50	10/26/21 15:00
BH02	2110459-02	Water	10/26/21 12:14	10/26/21 15:00
BH03R	2110459-03	Water	10/26/21 12:11	10/26/21 15:00
BH04R	2110459-04	Water	10/26/21 12:22	10/26/21 15:00
BH05R	2110459-05	Water	10/26/21 12:25	10/26/21 15:00
BH06R	2110459-06	Water	10/26/21 12:05	10/26/21 15:00
BH07	2110459-07	Water	10/26/21 11:50	10/26/21 15:00
BH09	2110459-08	Water	10/26/21 11:36	10/26/21 15:00
BH10R	2110459-09	Water	10/26/21 12:01	10/26/21 15:00
BH11	2110459-10	Water	10/26/21 11:26	10/26/21 15:00
BH12	2110459-11	Water	10/26/21 11:14	10/26/21 15:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

2110459.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 2

Client: PDC / Tasman Geosciences

Project Manager: MARK LONGHURST

Address: 6855 W. 119th Ave.

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield / CO/ 80020

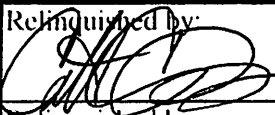
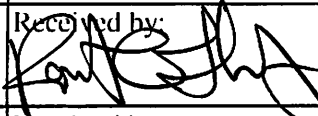
Phone: 303-487-1228

Project Name: OWL CREEK 7, 7-5

Sampler Name: COLETTE RAMEY

Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride	Sulfate		
1	BH01R	10/26/21	1150	4			4		✓					✓	✓	✓	✓	✓	✓		
2	BH02		1214	1			1														
3	BH03R		1211	1			1														
4	BH04R		1222	1			1														
5	BH05R		1225	1			1														
6	BH06R		1205	1			1														
7	BH07		1150	1			1														
8	BH09		1136	1			1														
9	BH10R		1201	1			1														
10	BH11		1126	1			1							✓	✓	✓	✓	✓	✓		

Relinquished by: 	Date/Time: 10/26/21 1500	Received by: Tasman's Lock Box	Date/Time: 10/26/21 1500	Turn Around Time (Check) Same Day _____ 72 hours 24 hours <input checked="" type="checkbox"/> Standard 48 hours _____ Sample Integrity: Temperature Upon Receipt: 9.2 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time:	Received by: 	Date/Time: 10/26/21 1600		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

2110459.2

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 2 of 2

Client: PDC / Tasman Geosciences

Project Manager: MARK LONGHURST

Address: 6855 W. 119th Ave.

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield / CO/ 80020

Phone: 303-487-1228

Project Name: OWL CREEK 7, 7-5

Sampler Name: COLETTE RAMEY

Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride	
1	BH12	10/26/21	1114	4			4		✓				✓	✓	✓	✓	✓	✓	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>10/26/21 1500</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>10/26/21 1500</u>	Turn Around Time (Check) ___ Same Day 72 hours ___ 24 hours <input checked="" type="checkbox"/> Standard ___ 48 hours ___ Sample Integrity: <u>9.2</u> Temperature Upon Receipt: <u>9.2</u> Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: <u>[Signature]</u>	Date/Time: <u>10-26-21 1500</u>	Received by: <u>[Signature]</u>	Date/Time: <u>10-26-21 1500</u>		
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____		

S₂

2/2

2110459

Sample Receipt Checklist

S2 Work Order# _____

Client: ROC/Tasman Client Project ID: OWL Creek 7, 7-S

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)Temp (°C) 9.2

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

 Custodian Printed Name or Initials

10-26-21
 Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH01R
2110459-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		125 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	11.6	1.20	mg/L	20	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	241	60.0	"	200	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	550	10.0	mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH02
2110459-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/26/21 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		123 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	12.2	12.0		mg/L	200	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	270	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	590	10.0		mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH03R
2110459-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/26/21 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	216	12.0	mg/L	200	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	1410	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1740	10.0	mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH04R
2110459-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/26/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	130	12.0	mg/L	200	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	3420	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3690	10.0	mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH05R
2110459-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/26/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	32.8	12.0	mg/L	200	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	383	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 12:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	899	10.0	mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH06R
2110459-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/26/21 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	15.8	12.0	mg/L	200	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	266	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	616	10.0	mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH07
2110459-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		122 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	13.0	12.0		mg/L	200	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	252	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	582	10.0		mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH09
2110459-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/26/21 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		123 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.0 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	8.20	1.20		mg/L	20	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	274	60.0		"	200	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	577	10.0		mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH10R
2110459-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/26/21 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	11.8	1.20	mg/L	20	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	401	60.0	"	200	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	721	10.0	mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH11
2110459-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **10/26/21 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	13.2	12.0	mg/L	200	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	198	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	512	10.0	mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

BH12
2110459-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/21 11:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEJ0589	10/28/21	11/03/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **10/26/21 11:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		126 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/26/21 11:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	7.80	1.20		mg/L	20	BEK0037	11/02/21	11/02/21	EPA 300.0	
Sulfate	204	60.0		"	200	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/26/21 11:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	489	10.0		mg/L	1	BEJ0604	10/29/21	10/29/21	SM2540C	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEJ0589 - EPA 5030 Water MS

Blank (BEJ0589-BLK1)

Prepared: 10/28/21 Analyzed: 11/02/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		119	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.8	21-167			

LCS (BEJ0589-BS1)

Prepared: 10/28/21 Analyzed: 11/02/21

Benzene	35.5	1.0	ug/l	33.3		107	51-132			
Toluene	39.4	1.0	"	33.3		118	51-138			
Ethylbenzene	43.2	1.0	"	33.3		130	58-146			
m,p-Xylene	81.7	2.0	"	66.7		123	57-144			
o-Xylene	42.1	1.0	"	33.3		126	53-146			
Naphthalene	39.0	1.0	"	33.3		117	70-130			
1,2,4-Trimethylbenzene	40.6	1.0	"	33.3		122	70-130			
1,3,5-Trimethylbenzene	39.2	1.0	"	33.3		118	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.7		"	13.3		125	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	21-167			

Matrix Spike (BEJ0589-MS1)

Source: 2110459-02

Prepared: 10/28/21 Analyzed: 11/03/21

Benzene	35.6	1.0	ug/l	33.3	ND	107	34-141			
Toluene	38.8	1.0	"	33.3	ND	116	27-151			
Ethylbenzene	43.4	1.0	"	33.3	ND	130	29-160			
m,p-Xylene	81.8	2.0	"	66.7	ND	123	20-166			
o-Xylene	42.6	1.0	"	33.3	ND	128	33-159			
Naphthalene	40.5	1.0	"	33.3	ND	121	70-130			
1,2,4-Trimethylbenzene	41.2	1.0	"	33.3	ND	124	70-130			
1,3,5-Trimethylbenzene	39.6	1.0	"	33.3	ND	119	70-130			
Surrogate: 1,2-Dichloroethane-d4	17.0		"	13.3		127	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEJ0589 - EPA 5030 Water MS

Matrix Spike Dup (BEJ0589-MSD1)		Source: 2110459-02			Prepared: 10/28/21 Analyzed: 11/03/21					
Benzene	35.8	1.0	ug/l	33.3	ND	107	34-141	0.589	30	
Toluene	39.2	1.0	"	33.3	ND	118	27-151	1.10	30	
Ethylbenzene	42.9	1.0	"	33.3	ND	129	29-160	1.09	30	
m,p-Xylene	82.7	2.0	"	66.7	ND	124	20-166	1.17	30	
o-Xylene	42.4	1.0	"	33.3	ND	127	33-159	0.235	30	
Naphthalene	38.2	1.0	"	33.3	ND	115	70-130	5.69	30	
1,2,4-Trimethylbenzene	41.3	1.0	"	33.3	ND	124	70-130	0.0969	30	
1,3,5-Trimethylbenzene	40.0	1.0	"	33.3	ND	120	70-130	1.13	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	18.1		"	13.3		136	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEK0037 - General Preparation

Blank (BEK0037-BLK1)

Prepared & Analyzed: 11/02/21

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BEK0037-BS1)

Prepared & Analyzed: 11/02/21

Chloride	3.28	0.0600	mg/L	3.00	109	90-110
Sulfate	15.9	0.300	"	15.0	106	90-110

Duplicate (BEK0037-DUP1)

Source: 2110459-01

Prepared & Analyzed: 11/02/21

Chloride	13.0	12.0	mg/L	11.6	11.4	20
Sulfate	232	60.0	"	241	3.81	20

Matrix Spike (BEK0037-MS1)

Source: 2110459-01

Prepared & Analyzed: 11/02/21

Chloride	1060	12.0	mg/L	600	11.6	176	80-120	QR-03
Sulfate	5620	60.0	"	3000	241	179	80-120	QR-03

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD	
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEJ0604 - General Preparation

Blank (BEJ0604-BLK1)

Prepared & Analyzed: 10/29/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BEJ0604-DUP1)

Source: 2110447-01

Prepared & Analyzed: 10/29/21

Total Dissolved Solids 498 10.0 mg/L 517 3.59 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Owl Creek 7,7-5

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
11/04/21 09:59

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference